

Water Quality Permits for Metal Mining Activities



State of Oregon
Department of
Environmental
Quality

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DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water

Background

This fact sheet outlines water quality permit requirements for metal mining activities in Oregon.

According to Oregon law, DEQ must protect water quality for all beneficial uses including public water supplies, fish/aquatic life, recreational, agricultural, and industrial (mining).

Metal mining activities include prospecting and mining of placer or lode (hard rock) and processing of metal ores using hand and power equipment. Wastewater is created when water (stream, groundwater or potable water) is used in processing ore for metal mining activities. DEQ does not require a water quality permit for hand panning. All other metal mining operations must have a water quality permit to properly manage process wastewater that discharges to land or state waters.

DEQ also requires water quality permits for best management practices to properly manage stormwater that may contact metal mining activities and runoff to Oregon waters.

In addition, DEQ requires water quality permits for mining operations on all private and public lands, including federal lands in Oregon.

Permitting procedures and fees for water quality permits are listed in Oregon Administrative Rule (OAR) 340-045. Fees for a water quality permit to operate a suction dredge having a suction hose with an inside diameter of eight inches or less are given in Oregon Revised Statute (ORS) 468B.052.

The following sections briefly describe each water quality permit for various metal mining activities.

Small suction dredges and in-water nonmotorized mining activities: General NPDES 700-PM Permit

This National Pollutant Discharge Elimination System (NPDES) permit covers suction dredges and in-water nonmotorized mining equipment such as hand sluice boxes and rocker boxes for recovering precious metals or minerals from stream bottom sediments. Operators of in-water mining equipment do not need to register and pay a fee for coverage, but must follow applicable permit conditions. Suction dredges that do not exceed 30 horsepower (hp) and have an inside diameter suction hose no greater than six inches may operate outside essential

salmon habitat. Suction dredges with 4-inch diameter or less intake nozzle opening and 16 hp or less may operate in essential salmon habitat. This permit coverage is valid statewide and applies to siphon/gravity suction dredges.

Other mining discharges: Individual NPDES Permit

DEQ requires an individual NPDES permit for metal mining activities **with wastewater discharges to Oregon waters** that do not qualify for a general NPDES permit. An individual NPDES permit is required for high bank machines or other metal mining activities which are located outside the wet perimeter of state waters including the bank or upland and discharge to streams or groundwater. Large suction dredges (powered or siphon/gravity) or mining and processing activities using chemical agents (e.g., cyanide, flocculants) require an individual NPDES permit to discharge to state waters.

If granted by DEQ, all individual NPDES permits will have conditions including but not limited to pollution prevention measures, water quality discharge limits and monitoring (i.e., turbidity, sediment, toxics), recordkeeping and reporting.

Large suction dredges will also have permit conditions to protect fish, wildlife and habitat with an in-stream work schedule and special measures for essential salmon habitat.

High bank machines or other metal mining activities located outside the wet perimeter of state waters including the bank or upland will also have permit conditions for wastewater management and treatment before discharge to Oregon waters.

The individual permit only applies to a specific operation and location or mining claim.

Small off-stream mining and ore processing: General WPCF 600 Permit

For off-stream management (closed-loop) of wastewater, DEQ has a general Water Pollution Control Facility (WPCF 600) permit for metal mining and non-chemical ore processing activities not exceeding 10,000 cubic yards per year.

Placer miners with high bank machines or powered sluice boxes with no discharge are the

majority of these permittees. Under general WPCF 600 permit coverage, suction dredges can be used in off-stream pits and impoundments. Trommels and other ore processing machinery also may operate under this permit.

If a placer miner plans to dig prospecting or exploration test holes and generate wastewater to assess samples with no discharge, DEQ requires general WPCF 600 permit coverage.

Large off-stream placer mining: Individual WPCF Permit

DEQ requires an individual WPCF permit for wastewater management if an owner or operator proposes a metal mining activity that processes more than 10,000 cubic yards of ore per year with no discharge to Oregon waters.

Chemical mining: DEQ Individual NPDES or WPCF Permit

This activity is regulated under OAR 340-043 for water quality. An example of this activity is an open-pit lode mine with cyanide heap-leach ore processing.

An owner or operator must apply for an individual NPDES permit for both wastewater and stormwater discharges to surface waters and protection of groundwater. If there are no discharges planned, an application is required for an individual WPCF permit with on-site management of wastewater and stormwater and protection of surface water and groundwater.

DEQ's chemical mining rule provides a consolidated water quality and waste management permit with acid mine drainage and construction, operation, closure and post-closure of the leach pad, surface impoundment and waste disposal unit.

Onsite (septic) sewage removal and disposal

DEQ prohibits discharge of sewage onto the ground surface and into surface waters.

Sewage at temporary operations must be removed from the mining site and properly disposed of by the miner or a licensed sewage disposal service. If a miner uses a bag system, portable toilet, recreational vehicle toilet or other mobile device, sanitary waste must be hauled away and properly disposed. Note: DEQ regulations prohibit dumping solid human waste into garbage bins and landfills. Sewage from holding tanks in RVs can be properly disposed at a RV Dump Station, often free of charge (www.rvdumps.com/dumpstations/oregon).

Permanent operations must have septic systems that are sited and constructed in accordance with DEQ's Onsite Rules (OAR 340-071).

DEQ or an authorized county must obtain all site evaluations and permits before construction of a septic system can begin.

401 water quality certification

DEQ's general WPCF 600 permit may not be appropriate for mining activities below the ordinary high water level of a stream. The U.S. Army Corps of Engineers and Oregon Department of State Lands have authority to issue or deny permits for mining activities below the stream's ordinary high water designation (or mean high tide line where state waters are subject to tidal influence).

An owner or operator must submit a Joint Permit Application to both the Army Corps of Engineers and Department of State Lands, which will respond in writing about whether a permit is required or not. If the Corps or other federal agency requires a permit (e.g., US Forest Service mining plan of operation), the owner or operator must also apply for DEQ's 401 water quality certification. State Land's removal-fill permit may also be required.

Stormwater permit considerations

Mining activity owner or operator may need to also register for coverage under additional general stormwater permits.

Industrial Stormwater General NPDES 1200-Z

Permit: DEQ requires an application for the general NPDES 1200-Z permit for potential industrial stormwater discharges to Oregon waters from Standard Industrial Classification Code 10 (www.osha.gov/pls/imis/sicsearch.html?p_sic=10&p_search=) metal mining operations if the stormwater will contact mining materials and/or waste (such as overburden, raw material, intermediate product or waste products). This 10-code group covers Metal Mining: iron (1011), copper (1021), lead and zinc (1031), gold (1041), silver (1044), ferroalloy (1061), metal mining services (1081), uranium-radium-vanadium (1094) and miscellaneous other metals (1099). Gold ores (placer or lode/hard rock) are included in SIC code 1041. DEQ requires a stormwater pollution prevention and control plan with applications for general NPDES 1200-Z permit coverage.

Construction Stormwater General NPDES

1200-C Permit: DEQ requires a general NPDES 1200-C permit application for potential stormwater discharges from construction activities that will disturb one or more acres with potential stormwater runoff to Oregon waters or conveyance systems (such as a catch basin, storm drain, ditch, pipe, culvert, etc.) leading to state surface waters. Construction activities include clearing, grading, excavation and stockpiling.



DEQ also requires an erosion and sediment control plan with the general NPDES 1200-C permit application.

Mercury collection

Using mercury to extract precious metals (such as gold and silver) from ore is *not* covered under DEQ's water quality permits. The process of adding mercury to ore concentrate, creating mercury-precious metal amalgam to separate from fines/slime, then burning the amalgam to drive off mercury and leaving the precious metal is harmful to human health and the environment. Exposure by ingestion, absorption directly through skin, and inhalation of mercury vapor when heated causes nerve and brain damage. Mercury spills and releases harm the environment. A serious environmental violation of unpermitted mercury releases to the environment can result in a penalty amounting to thousands of dollars. Performing this activity and mismanaging hazardous waste knowingly may be an environmental crime.

To reduce harmful exposure to and provide proper management of mercury, DEQ and many local household hazardous waste programs accept mercury and mercury-containing devices from Oregon residents **free of charge**. If miners have collected incidental mercury from mining activities (e.g., suction dredging, off-stream sluicing), please dispose through the free mercury collection program. Mercury is also accepted **free of charge from small businesses in Oregon** which are conditionally exempt from hazardous waste regulations. DEQ provides information for local collection facilities and events by county or free home pickup. Call (503) 229-5106 or see <http://www.deq.state.or.us/lq/mercurycollection.htm>

For more information

For more details, see DEQ's Water Quality Permit Program Web page for mining: <http://www.deq.state.or.us/wq/wqpermit/mining.htm>

Contact **Jim Billings** with DEQ's Water Quality Division in Portland at (503) 229-5073 or toll-free in Oregon at 800-452-4011, x5073, or e-mail Billings.Jim@deq.state.or.us for specific questions about permit administration and compliance assistance on NPDES 700-PM, WPCF 600, and individual permits, or if you are unable to reach a water quality permit contact.

For applications and to register for coverage under general water quality permits, contact the permit coordinator in your region:

- **Cecilia Mitchell**, Portland, for NPDES 700-PM (statewide) by phone at (503) 229-6114 or toll-free in Oregon at 800-452-4011, x6114, or by e-mail at Mitchell.Cecilia@deq.state.or.us.

- **Alice Kavajecz**, Portland, for WPCF 600 for out-of-state and those applicants in Northwest Region (Clackamas, Clatsop, Columbia, Multnomah, Tillamook and Washington counties) by phone at (503) 229-5449 or toll-free in Oregon at 800-452-4011, x5449, or by e-mail at Kavajecz.Alice@deq.state.or.us.
- **Nancy Stellmach**, Portland, for NPDES 1200-Z and NPDES 1200-C in Northwest Region phone at (503) 229-5438 or toll-free in Oregon at 800-452-4011, x5438, or by e-mail at Stellmach.Nancy@deq.state.or.us.
- **Kathy Jacobsen**, Eugene, for WPCF 600, NPDES 1200-Z and NPDES 1200-C permits in Western Region (Coos, Curry, Douglas, Lane, Jackson, Josephine, Benton, Lincoln, Linn, Marion, Polk and Yamhill counties) phone at (541) 687-7326 or toll-free at 800-844-8467 or by e-mail at Jacobsen.Kathy@deq.state.or.us.
- **Jackie Ray**, Pendleton, for WPCF 600, NPDES 1200-Z, NPDES 1200-C in Eastern Region (Baker, Gilliam, Grant, Malheur, Morrow, Umatilla, Union, Wallowa, Wheeler, Crook, Deschutes, Harney, Hood River, Jefferson, Klamath, Lake, Sherman and Wasco counties) by phone at (541) 278-4605 or toll-free in Oregon at 800-304-3513, or by e-mail at Ray.Jackie@deq.state.or.us.

For general and individual water quality permits in Eastern Region, please contact **Carl Nadler** by e-mail at Nadler.Carl@deq.state.or.us or call him at (541) 298-7255, x227, The Dalles.

For septic system permits, contact DEQ's Onsite Wastewater Management Program, Eugene, by calling (541) 686-7838 (toll-free in Oregon at 800-844-8467), or see the Internet page at <http://www.deq.state.or.us/wq/onsite/onsite.htm>. DEQ's Onsite contact person can also provide contact information for counties with jurisdiction over septic systems, or see contact information on <http://www.deq.state.or.us/wq/onsite/contymap.htm>. For RV dump station locations in Oregon, see <http://www.rvdumps.com/dumpstations/oregon>.

For DEQ 401 Certifications, contact **Alex Liverman** in Portland by phone at (503) 229-6030, toll-free in Oregon at 800-452-4011, x6030, or e-mail Liverman.Alex@deq.state.or.us. A fact sheet, *401 Water Quality Certification for Dredge and Fill Proposals*, is available on <http://www.deq.state.or.us/wq/sec401cert/removalfill.htm>.



Related mining authorities

DEQ requires permittees to comply with requirements of local, state and federal agencies regarding the location, operation and reclamation of metal mining activities in Oregon. Contact:

- Oregon Parks & Recreation Department: See <http://www.oregon.gov/OPRD/RULES/waterways.shtml> or call (503) 986-0733, Salem.
- U.S. Army Corps of Engineers: See <http://www.nwp.usace.army.mil/op/g/home.asp> or call (503) 808-4373, Portland.
- Oregon Department of State Lands: See <http://www.oregonstatelands.us/DSL/PERMITS/index.shtml>, or call (503) 986-5200, Salem.
- Oregon Department of Fish and Wildlife: See *Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources* at <http://www.dfw.state.or.us/lands/inwater/> or call (503) 947-6200, Salem.
- Oregon Water Resources Department: See <http://www.wrd.state.or.us/OWRD/offices.shtml>, or call (503) 986-0900, Salem.
- Oregon Department of Geology and Minerals Industries: Call (541) 967-2039, Albany, or see <http://www.oregon.gov/DOGAMI/mlr/newmlrrp/permitting.shtml>.
- U.S. Forest Service (Region 6): Call the district ranger for the national forest where you want to mine or see <http://www.fs.fed.us/geology/>. The Region 6 web page is <http://www.fs.fed.us/r6/>.
- U.S. Bureau of Land Management: See <http://www.blm.gov/or/programs/minerals/> or call (503) 808-6008, Portland.

Alternative formats

Alternative formats (Braille, large type) of this document can be made available. Contact DEQ's Office of Communications & Outreach, Portland, at (503) 229-5696, or call toll-free in Oregon at 1-800-452-4011, ext. 5696.